

Claims

- Sub A2
- 003037-29460
1. An isolated mammalian epididymis-specific receptor protein which has the amino acid sequence shown the in SEQ ID NO: 2, or a derivative or fragment thereof having at least one biological activity and/or immunogenicity of said protein.
 2. A protein of claim 1 wherein said derivative or fragment is a hydrophilic region of said receptor.
 3. A protein of claim 2 wherein said derivative or fragment is an extracellular hydrophilic region of said receptor.
 4. A protein of claim 1 having a sequence represented by SEQ ID NO: 2.
 5. A protein of claim 1 wherein said fragment is selected from the group consisting of any one of SEQ ID NO: 3-7.
 6. An isolated DNA sequence which codes for the receptor protein or an active derivative or fragment thereof having the same biological activity and/or immunogenicity, according to claim 1.
 7. An isolated DNA sequence which codes for a protein of claim 3.
 8. An isolated DNA sequence which codes for a protein of claim 4.
 9. An isolated DNA sequence according to claim 6, chosen from

a) the nucleotide sequence shown in SEQ ID NO: 1,

- b) the sequence of nucleotides 1 to 3,114 of SEQ ID NO: 1,
- c) a sequence homologous to the sequence represented by SEQ ID NO: 1 having a degree of homology of at least 70% and
- d) a syngenic or complementary sequence of a sequence according to a), b) or c), or a fragment thereof, where said sequence codes for a protein or polypeptide having the same biological activity and/or immunogenicity as said protein or active derivative or fragment.

- 10. A vector molecule, comprising at least one of the DNA sequence according to claim 2 as an insert, while maintaining the ability to replicate in a suitable host cell.
- 11. A vector molecule according to claim 10, wherein said DNA sequence is inserted in said vector, in a manner such that expression thereof can take place in a suitable host organism.
- 12. A prokaryotic or eukaryotic host cell transformed with a vector molecule according to claim 10.
- 13. A prokaryotic or eukaryotic host cell transformed with a vector molecule according to claim 11.
- 14. A process for the preparation of an isolated mammalian epididymis-specific receptor protein, which has an amino acid shown in SEQ ID NO: 2 or a derivative or fragment thereof having at least one biological activity and/or immunogenicity of said protein, said process comprising culturing a host cell according to claim 12 in a culture batch under conditions which allow expression of the DNA sequence, and

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obtaining the expression product from the culture batch.

15. An isolated antibody, which reacts with and is specific to at least one epitope included in a protein or polypeptide according to claim 1.
16. The antibody of claim 15 wherein said antibody is a monoclonal antibody.
- Sub A3 7 17. A pharmaceutical composition which comprises one or more of the proteins or polypeptides according to claim 1 as an active component.
18. A pharmaceutical composition which comprises at least one antibody according to claim 15 as an active component.
19. A pharmaceutical composition which comprises, as an active component, at least one nucleotide sequence which hybridizes with a nucleotide sequence according to claim 6.
20. A pharmaceutical composition according to claim 19, further comprising a detectable marker.
- Sub A4 7 21. A pharmaceutical composition according to claim 17 for diagnosis of male reproduction disorders.
22. A pharmaceutical composition according to claim 17 for treatment of male reproduction disorders or for contraception.
- Sub A5 7 23. A method of isolating a ligand specific for an epididymis-specific receptor comprising incubating the epididymis-specific receptor with a substance suspected to be a ligand of said receptor and detecting

binding of said receptor to said ligand.

24. A method according to claim 23 wherein said ligand is an agonist of said epididymis-specific receptor.

25. A method according claim 23 wherein said ligand is an antagonist of said epididymis-specific receptor.

26. A method of treating infertility in a male mammal comprising administering an agonist of an epididymis-specific receptor to said male mammal.

27. A contraceptive method for male mammals comprising administering an antagonist of an epididymis-specific receptor to said male mammal.

28. A method of treating infertility in a male mammal comprising administering an agonist of an epididymis-specific receptor of claim 1 to said male mammal.

29. A contraceptive method for male mammals comprising administering an antagonist of an epididymis-specific receptor of claim 1 to said male mammal.

30. A method of diagnosing infertility in a male mammal comprising measuring antibodies from said male to an epididymis-specific receptor.

Sub-A6

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Sub-A7